

William Robinson's book is aimed primarily at an undergraduate audience with little or no entomological background. It is an introductory text, necessarily limited in scope and depth but which presents the essential features of the biology of the important insect groups. Most importantly for a book of this type it is highly readable—the author illustrates his points by drawing on a wealth of entomological experience from the United States, China, Japan and Europe gained over the 23 years he has taught the subject to students at the Virginia State University. The first part of the book traces the development of human societies through primitive village cultures to the modern western city, and demonstrates how a diversity of domestic living arrangements can lead to different patterns of insect infestation and health-related problems. The theme of defensible ('sacred') space is developed to underline the importance of emotional and cultural reactions to insects in defining how people choose to deal with them. The second part covers domestic pests, including those of stored foodstuff, and the third part deals with peridomestic pests such as flies (including vector mosquitoes), ants and wasps. The final part of the book covers the biology and control of structural pests. Pest control is presented in terms of general strategies rather than specific technologies, which tend to vary with country and can change rapidly over time. A short bibliography is given at the end of each chapter—a more realistic approach in a student text than providing extensive reference lists. I found this a useful book which achieves its aims of providing a broad introduction to the subject, and I would recommend it to students interested in this important and developing area of entomology.

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Fundamental toxicology for chemists. ed. J. H. Duffus & H. G. J. Worth, Royal Society of Chemistry, Cambridge, 1996, 327 pp., price UK£29.50. ISBN 0-85404-529-5

Chemists rank high among those on whom recent regulations concerning Safe Handling of Chemicals and Health and Safety at Work impinge. Problems of toxicity of chemicals arise not only in manufacture of intermediates and end-products but also in user situations in industry, agriculture and the home. This multi-author book is not intended to prepare chemists to be toxicologists but to render them able to make judgements or give advice concerning chemicals encountered in the execution of their profession. Individual chapters are related in some degree to a skeletal proposed curricu-

ulum (set out in an Appendix) drafted by the IUPAC Commission on Toxicology and the IUPAC Committee on the Teaching of Chemistry. The chapters related to general principles serve a proposed 30-student-hour 'core' course and cover in adequate detail the basics of exposure routes, chemical interactions, dose-response, toxicokinetics and dynamics (biotransformation, activation, degradation and disposal of chemicals), design of toxicity studies, data interpretation, risk assessment and management, monitoring methods and safe handling. These chapters impart little comprehension of the underlying biochemical processes involved. With an excellent 77-page Glossary of Terms used in toxicology, they occupy about half the book. Of varied breadth and quality are the remaining chapters (said to relate to a further 20-student-hour study course) about target systems or organs (skin, lung, genetic material, etc.) on only two groups of chemicals (radionuclides and Biocides and Pesticides). On selective reading, I found the chapter on skin toxicity brief and uninformative, but that on lung to be a clear biological introduction with illustrations. A well-written but highly compressed six pages on neurotoxicity contrasts with an unsuitably elaborate 20-page discourse on behavioural toxicology. A nine-page chapter on Biocides and Pesticides lists 14 classes but draws all its examples from only one, with detailed explanation of the mode of action of three insecticides, each of which affects the nervous system. Thus, as chapters to chase through once in order to get a partial picture of the flesh on the skeleton of general principles, this half of the book serves chemists indifferently: a firmer editorial hand would have been an advantage. Each chapter has a Bibliography but I would have liked to see a listing of the bigger and better reference books, both for processes underlying interaction of chemicals with biological systems, and those concerning toxicology of a wider range of chemicals. Thus, in those areas with which I am most familiar, the chemist needs to know of Spencer and Schaumburg's classic compendium 'Experimental and Clinical Neurotoxicology', and for pesticides, it is surprising to find no mention of the Publisher's own standard reference work, 'The Agrochemical Handbook' (based on an earlier German text, presumably known to the author).

In the UK and elsewhere, there are several undergraduate texts available to enquirers into toxicology. This one does not fully justify its title of 'Fundamental': it may serve to satisfy the curious chemistry student, although the depth of pharmacokinetics presentation could be daunting. A practising chemist who meets actual problems of toxicity would need other texts to supplement the better parts of this one.

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